

mechanical keypad 16 could measure and report this time duration. At 323, the processor determines if the time duration was greater than a predetermined time period, A. This time duration may be user selectable and could be, for example, 1-3 seconds. If the processor 30 determines that the time duration is greater than the predetermined time period, then, at 325, the processor 30 uses the top-level character choice of the key pressed and the method recycles to the beginning. For example, referring to the key 2 of FIG. 5, the top-level character is the number two.

[0024] If, at 323, the processor 30 determines that the time duration is not greater than the predetermined time period, A, or, if, at 318, the processor 30 determines that the key was released, then at 320 the processor 30 begins to monitor the input data stream of touchpad data signals received from the driver device 12 as well as whether or not the finger is still on the capacitive touchpad 10 (whether or not a resultant signal is present). The touchpad data signals will be indicative of the current location of the finger on the wire grid 22.

[0025] At 322, the processor 30 compares the touchpad data signals received from the driver in the input data stream to touchpad data signals and associated character values in the lookup table selected at 314. Upon finding a touchpad data signal in the lookup table that matches or correlates or corresponds to the touchpad data signals received from the driver, the processor 30 may be able to resolve the touchpad data signals of the data stream to one of the character values associated with the found touchpad data signal thereby removing any ambiguity or disambiguating the key pressed or activated. The manner by which the processor 30 matches the touchpad data signals received from the driver to a touchpad data signal in the lookup table can be done by conventional known database searching and matching techniques.

[0026] At 324, the processor 30 determines if the user has removed his/her finger from the capacitive touchpad 10. This may be accomplished by merely monitoring the touchpad data signals from the driver 12.

[0027] If, at 324, the processor 30 determines that the user has removed his/her finger from the capacitive touchpad 10, at 326 the processor 30 determines if the input data stream matched or corresponded to or correlated with one of the character value entries in the lookup table. More specifically, the processor 30 determines if it was able to successfully resolve the data stream of touchpad data signals to a character value of a plurality of character values at 326. If the processor 30 determines that the input data stream matched one the character values at 326, then at 330 the processor 30 uses this character value according to the application needs of the subscriber device 1 and the process returns to the beginning.

[0028] If, at 326, the processor 30 determines that the input data stream did not match any of the character values at 322, then at 328 the processor 30 concludes that the user abandoned the last input data stream and returns to 310 to start over.

[0029] If, at 324, the processor 30 determines that the user has not removed his/her finger from the capacitive touchpad 10, then at 332 (FIG. 4) the processor 30 determines if a new mechanical key was pressed. If the processor 30 determines that a new mechanical key was pressed, then at 334 the

processor 30 concludes that the user abandoned the last input data stream and uses the new mechanical key for starting over at 312.

[0030] If, at 332, the processor 30 determines that a new mechanical key was not pressed, then at 336 the processor 30 displays a plurality of characters that can be input or selected based upon the key pressed at 310. These characters may be displayed by the display 4 of the subscriber device 1. At 338, the user chooses one of the characters from a menu, finger movement or a combination of both.

[0031] Referring to FIG. 5, operation of the subscriber device 1 with the disambiguated keypad will be discussed. Initially, operation of the subscriber device 1 will be discussed for entering the text symbol A. The user will initially press the key 2 with the number two thereon. The mechanical keypad 16 will resultantly generate a key selection signal corresponding to the selection of this key 2. The processor 30 will receive this key selection signal via the keyboard port 28 and will choose a lookup table stored in memory 24 that corresponds to this key 2. If the user subsequently releases the key 2 and slides the user's finger in the north-west direction as shown in FIG. 5 (arrow pointing toward A), the user's finger will begin to interact with the electrical charges in the wire grid 22 of the touchpad 10. More specifically, the user's finger will induce a differential potential value on the region of the wire grid to the northwest of this key 2. A signal corresponding to this differential potential value (resultant signal) will be output to the driver 12. The driver 12 will subsequently send a data stream of touchpad data signals to the processor 30. The processor 30 will look in the selected look up table for matching the data stream of touchpad data signal to a character value, and will subsequently match this data stream to the character A. The letter B or C could have been selected by the user sliding the user's finger in the north or northeast directions, respectively.

[0032] Also, if the user intended to enter the number two, the user would simply maintain pressure on the key 2 for a time duration that is longer than a predetermined time period (see 323 of FIG. 3).

[0033] If the user would like to enter the text Z, the user will initially press the key 3 with the number nine thereon. The processor 30 would operate in the above-described manner so that the user could select the character Z by sliding the finger off the key and in the east direction. Note much of the preferred logic discussed herein may be changed without deviating from the spirit and scope of the present invention. For example a reasonably short key activation, without or without a finger slide, may result in selection of a numeric value whereas a relatively longer activation including a finger slide in a particular direction may represent a particular alpha character. One of ordinary skill in view of the disclosure, principles and concepts discussed and described herein will likely be prepared to develop other logical approaches.

[0034] Therefore, the present invention advantageously provides a method and device for disambiguating a plurality of keys for a mechanical keypad by permitting a user to select a particular character by sliding the user's finger in a particular direction. As a result, a user will be able to enter text in a more efficient manner.

[0035] While the above description is of the preferred embodiment of the present invention, it should be appreci-